

Ring in the New Bells

The bells of St Michaels have rung out for centuries in warning and in celebration, calling the parishioners to prayer, curfew, and celebrating marriages and tolling deaths.

They are silent now awaiting restoration. It is an appropriate opportunity to look back at their past history and forward to a new chapter for them.



Archdeacon Mangin, at the turn of the 20th century, recorded that “there are three bells in the tower; all had been ancient, but the largest, called the “Big Bell”, was melted down and re-cast in 1764”. The other two have inscriptions around the rim.

Bell	Weight	Nominal	Note	Diameter	Dated	Founder
1		1524.0	G	25.50"	c1440†	(unidentified)
2		1343.0	F	28.50"	c1540†	(unidentified)
3	8½cwt	862.0	A	36.00"	1764	Lester & Pack

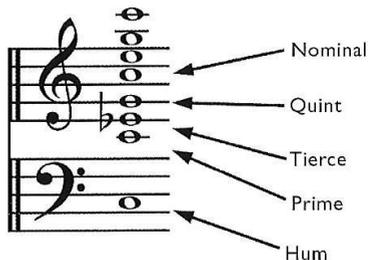
These bells have the notes that are approximately equivalent to 2, 3 and 8 of a 10 bell “ring”. The two trebles (smaller bells, higher notes, are listed bells. They are all presently unringable.

There is a proposal to install the former ring of 6 bells from Newton Hall along with 4 new trebles to produce a light ring of 10 of around 12cwt. Plans are well advanced.

Casting Bells have been cast in the shape we know today for at least four thousand years and are still cast by specialist bell-foundries today from bell metal, a bronze alloy. The Saxons installed large bells in church towers in England though none of the towers that remain today are older than the tenth century. The Romans used bells in London to mark the hours of the day. A story told by Bede tells us that when the Abbess Hilda died at Whitby in 680, the death-knell could be heard thirteen miles away.

Tuning When cast, it is the shape, profile thicknesses and weight of the bell that gives it its fundamental ‘nominal’ note. Harmonic notes, five main ones, accompany the nominal to give a bell its characteristic rich sound.

Cast bells used to be tuned by chipping out the metal on the inside of the bell. Now this fine tuning is performed on a lathe where metal is cut from the inside of the bell in order to produce a true tone with the right harmonics.



Hanging There will be some work to do in the tower to construct a new hanging frame as the old one has deteriorated and is now unsafe. These frames were usually constructed of heavy timbers but now are normally steelwork, allowing more bells to be installed in the same space.



With a steel frame, the set is hung in a balanced way so as to not impose excessive forces on the tower structure when the bells are being rung. The vertical and lateral forces are up to 4 and 2 times the bell's weight, transmitted to the tower

Ringing Very heavy bells, Big Ben for example, are rung by striking them. Many bells are rung by being chimed. Here the bell swings smoothly back and forth not chiming until the ringer 'checks' or 'jerks' the rope in order to force an unnatural swing so that it is struck by the unconstrained clapper.

But it is change-ringing, which began to be introduced in the 16th century, which sets English bell-ringing apart. The bells are swung full-circle, striking on both the forward and back strokes and multiple pairs of bells change places on each stroke in a melodious, and often complex, constantly changing pattern.

There have been thousands of different sequences, called 'methods', devised over the years.

The time taken to ring a full set of changes depends on the number of bells. One full set with six or fewer bells can take only minutes but with 12 or more bells would take years and hundreds of millions of strokes.

1	2	3	4	5	6
2	1	4	3	5	6
4	2	5	1	3	6
4	5	2	3	1	6
5	4	3	2	1	6
5	3	4	1	2	6
3	5	1	4	2	6
3	1	5	2	4	6
1	3	2	5	4	6
1	3	5	2	4	6
3	1	2	5	4	6
3	2	1	4	5	6
2	3	4	1	5	6
2	4	3	5	1	6
4	2	5	3	1	6
4	5	2	1	3	6
5	4	1	2	3	6
5	1	4	3	2	6
1	5	3	4	2	6
1	5	4	3	2	6
5	2	1	2	1	6